

FINAL DETERMINATION ANALYSIS DOCUMENT  
PREVENTION OF SIGNIFICANT  
DETERIORATION AND

APPROVAL OF CONSTRUCTION OF  
THE ATLANTIC RICHFIELD COMPANY/SOHIO PETROLEUM COMPANY,  
PRUDHOE BAY, ALASKA

SCOPE

This document presents the final determination by the Environmental Protection Agency (EPA) to approve the construction of forty-two gas fired turbines and thirty-one gas fired heaters at the Prudhoe Bay oil field complex, Prudhoe Bay, Alaska, under the federal requirements of Part C, Title 1, of the Clean Air Act, "Prevention of Significant Deterioration of Air Quality (PSD)".

BACKGROUND

On October 17, 1980, EPA Region 10 received from the Atlantic Richfield Company and SOHIO Petroleum Company (ARCO/SOHIO) a complete PSD permit application requesting approval for the addition of forty-two gas turbines and thirty-one heaters to be installed at the Prudhoe Bay oil field. EPA reviewed this material and presented its findings in a preliminary determination document which was released for public comment and published in the "Fairbanks News-Miner" and "Anchorage Times" on April 28, 1980. A preliminary determination to approve the facility was issued on the basis that the National Ambient Air Quality Standards (NAAQS) would not be exceeded and that best available control technology (BACT) would be employed. Affected governmental agencies and the general public were notified of their opportunity to submit written comments and request a public hearing regarding EPA's preliminary determination.

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PUBLIC COMMENT

On May 22, 1980 EPA received comments from ARCO/SOHIO requesting that certain findings in the technical analysis document be clarified and amended.

1. COMMENT

ARCO/SOHIO requested clarification regarding the demonstration of compliance with the conditions of the permit. ARCO/SOHIO contends that the technical analysis document does not clearly indicate whether each individual gas-fired turbine and process heater must be tested. It is also not clear whether the units may be factory tested or must be tested on-site.

EPA RESPONSE

The EPA technical staff has reviewed the comments by ARCO/SOHIO concerning the compliance demonstration for the proposed heaters and turbines. It is EPA's contention that a compliance demonstration must be accomplished for each turbine as stated in 40 CFR 60.335. However, factory testing is an acceptable alternative if tested under the same conditions as will be experienced when operating on-site. The process heaters must be tested on-site, but the testing of a specific type shall be representative for all additional process heaters of the same type. SOHIO will submit to EPA a test plan for approval. Once the compliance demonstration is made, no other such demonstration is required for the purpose of this permit unless specifically requested by EPA or the State. Compliance demonstration requirements are included in the final permit.

2. COMMENT

ARCO/SOHIO indicated that the technical analysis document did not adequately substantiate the limitation of opacity to five percent. ARCO/SOHIO believes that the State Implementation Plan limit of 20 percent is more appropriate.



### EPA RESPONSE

The five percent opacity limit on gas-fired turbines and process heaters is based on New Source Performance Standard (NSPS) tests and G.E. turbine tests. EPA believes that the five percent opacity limitation for the process heaters is appropriate. However, we do believe that a change in the turbine opacity limit from 5 to 10 percent is reasonable. A 10 percent opacity limit will reflect BACT and will insure proper operation and maintenance of the units. The 20 percent opacity limit which the state applies to new and old existing sources alike, does not reflect the capabilities of current state-of-the-art technology and, therefore, does not reflect BACT.

### 3. COMMENT

ARCO/SOHIO has requested the option to perform periodic testing on the turbines and process heaters with a portable monitoring device rather than installing the recommended continuous monitors.

### EPA RESPONSE

Upon further consideration, the EPA technical staff has concluded that a continuous monitoring system or the periodic portable monitoring program will accomplish the same objective; the assurance of proper operation and maintenance procedures on the turbines. Therefore, should ARCO/SOHIO choose the periodic monitoring program, a monitoring plan must be submitted to EPA for approval. The monitoring requirements are reflected in the final permit.

### FINDINGS

Based upon our review of the application, EPA finds that the "Class II" air quality increments and the NAAQS will not be exceeded as a result of this project and that the proposed installation of the turbines and heaters will employ BACT. In light of these findings, EPA grants approval to install the turbines and heaters as requested by Atlantic Richfield Company and SOHIO Petroleum Company in the PSD permit application received on August 7, 1979 and supplemented on December 13, 1979 and January 24, 1980. This approval is subject to the terms and conditions set forth in the letter of approval to Atlantic Richfield Company and SOHIO Petroleum Company.